Religious Involvement, Social Support, and Health Among African-American Women on the East Side of Detroit

Juliana van Olphen, PhD, Amy Schulz, PhD, Barbara Israel, DrPH, Linda Chatters, PhD, Laura Klem, AB, Edith Parker, DrPH, David Williams, PhD

BACKGROUND: A significant body of research suggests that religious involvement is related to better mental and physical health. Religion or spirituality was identified as an important health protective factor by women participating in the East Side Village Health Worker Partnership (ESVHWP), a community-based participatory research initiative on Detroit's east side. However, relatively little research to date has examined the mechanisms through which religion may exert a positive effect on health.

OBJECTIVE: The research presented here examines the direct effects of different forms of religious involvement on health, and the mediating effects of social support received in the church as a potential mechanism that may account for observed relationships between church attendance and health.

DESIGN: This study involved a random sample household survey of 679 African-American women living on the east side of Detroit, conducted as part of the ESVHWP.

MAIN RESULTS: Results of multivariate analyses show that respondents who pray less often report a greater number of depressive symptoms, and that faith, as an important source of strength in one's daily life, is positively associated with chronic conditions such as asthma or arthritis. Tests of the mediating effect of social support in the church indicated that social support received from church members mediates the positive relationship between church attendance and specific indicators of health.

CONCLUSIONS: These findings are consistent with the hypothesis that one of the major ways religious involvement benefits health is through expanding an individual's social connections. The implications of these findings for research and practice are discussed.

KEY WORDS: religious involvement; health; community-based participatory research; African-American women; urban health. J GEN INTERN MED 2003;18:549–557.

A growing body of evidence suggests that religious involvement is protective to both mental and physical health[1–15] This finding has been consistent across studies despite differences of samples, designs, methodologies, measures of religious involvement, health outcomes and population characteristics. Despite widespread recognition of the complexity of religious involvement, much of this research has assessed religious involvement by a single measure, most often religious affiliation or frequency of church attendance.[3,6,16–19] Prior research that has included multiple indicators of religious involvement has begun to: clarify what dimensions (and indicators) are most salient to health outcomes; suggest mechanisms that may account for associations between religious involvement[20]; and assist in understanding how dimensions of religious involvement are differentially related to health concerns.[1] For example, subjective religious involvement (e.g., faith or religious belief) may influence physical health through encouraging behaviors that reduce health risks, such as avoidance of smoking, alcohol consumption, drug use.[20] On the other hand, nonorganizational religious involvement (e.g., prayer or bible reading) may positively influence mental health through encouraging emotions such as hope and forgiveness and physical health through potential effects on physiologic processes. Greater specificity in the independent and dependent variables in research on religion and health will help clarify how religious involvement influences health.

There are a variety of mechanisms through which religion may exert a positive influence on health. For example, many scholars agree that membership in religious communities may enhance social resources in ways that are beneficial for health.[20–25] Considerable evidence shows that social support is associated with better mental and physical health,[26–31] yet researchers have only recently begun to document the role of social support in religion and health.[32] Recent research has found that those who attend church more frequently have a greater number of social ties and interactions, rate their social ties more positively, and benefit from more frequent exchanges of goods, services, and information, than do those who attend church less frequently.[20–25,32–34]

The conceptual framework that guides this study is adapted from a multidimensional model of religious involvement described in the literature[3,6,7,16,35] and from a stress process model that reflects longstanding evidence of a strong, negative association between stressors and health.[36] The context-specific stress process model used in these analyses was developed using a community-based participatory process that engaged community residents in discussions about stressors, as well as "things that make it not so bad" in their own lives and the lives of other east side Detroit residents.[37] Community residents' identification of

different forms of religious involvement as important buffers against the adverse effects of stress on health reinforced the importance of using a multidimensional model of religious involvement.[35,36]

This article explores the relationship between religious involvement and health among African-American women on the East Side of Detroit. This study was conducted using a community-based participatory research (CBPR) approach. To our knowledge, there have been no CBPR studies to date that have explored the role of religion in health. We describe the use of a CBPR approach to enhance the relevance of study findings for the community.[15] We extend previous research on religion and health by using multiple indicators of religious involvement and health to examine the direct effects of religion on health and the mediating role of social support in the relationship between religion and health, while controlling for a number of correlates of religious involvement.

METHODS

Sample and Data Collection

The data analyzed for this study were collected as part of a baseline assessment for the East Side Village Health Worker Partnership (ESVHWP), a CBPR project carried out under the aegis of the Detroit Community-Academic Urban Research Center[38] and funded by the Centers for Disease Control and Prevention. The objectives of the ESVHWP are to identify the social determinants of health on Detroit's east side and to address those factors using a lay health advisor intervention to improve the health of women and children.[37,38] The purposes of the baseline assessment were to: assess community problems and resources that might guide the intervention; gather baseline data to evaluate the effects of the intervention on the community; and test a stress process model in an urban community.[37]

In the first 6 months of the ESVHWP, a Steering Committee comprised of representatives of a number of well-respected community-based organizations, academic and health department partners came together to oversee the design, implementation, and evaluation of the partnership.[37] A first task of the Steering Committee was to adopt a set of community-based participatory research principles to guide its work. Some of the key principles that the Steering Committee adopted include: facilitation of an equitable partnership in all phases of the research; promotion of colearning and capacity building among all partners; and integration of research and action for mutual benefit of all involved. In accordance with these principles, the Steering Committee actively engaged in a series of discussions to elicit perceptions of sources of stress for women in the community who care for children, and the cumulative toll of these stressors on health. Forms of religious involvement such as prayer and participation in a church were consistently named as things that buffer long-term damaging effects of stressors on health, and were consequently included as areas of inquiry on the survey.

The data were collected using a 2-stage random sample community survey administered during the summer of 1996. In order to achieve the desired 1,000 completed interviews, 2,800 households were randomly selected from the sampling frame of 6,124 households blocklisted.[37] In households with more than 1 eligible member, a Kish selection table was used to randomly select 1 respondent.[39] In total, 700 interviews with women living in a defined area on Detroit's east side were completed and verified as usable.[37] In order to participate, the respondent had to be 18 years of age or older, and responsible for the care of at least 1 child under the age of 18 for at least 5 hours a week. Based on the decision of the Steering Committee, community residents rather than students were trained by staff from the University of Michigan School of Public Health to conduct the interviews. The response rate (the number of completed interviews divided by the number of eligible households) was 81%. The sample for the investigation presented here includes only those respondents who reported their race as African American (97% of survey respondents, $n = 679$).

Measures: Independent Variables

In accordance with CBPR principles, the Steering Committee of the ESVHWP assumed a central role in designing the survey instrument, ensuring that the language was understandable, culturally appropriate, and that the length of the survey was reasonable. Then, community members being trained as field interviewers pretested the survey and provided comments that led to further revisions.[37] Input from the Steering Committee and other community members, thus, was essential to the process of identifying the measures described below. Some of these measures have been validated in prior research.[7,35]

Religious Involvement. Consistent with the model of religious involvement that guided this study,[35] measures of organizational, nonorganizational, and subjective religious involvement were included. Organizational religious involvement referred to formal or public participation of individuals in the activities of a local religious congregation or community. The following single item represented this dimension: "How often do you usually attend religious services? Would you say more than once a week, at least once a week, a few times a month, a few times a year, or less than once a year?" Nonorganizational religious involvement referred to an individual's private devotional acts (e.g., prayer), and this dimension was assessed by a single item that asked respondents, "How often do you pray?" Response categories included: Several times a day; once a day; at least once a week; a few times a month; a few times a year; and never. Subjective religious involvement was assessed by a single item that asked respondents, "In general, how important is your faith or spiritual beliefs as a source of strength in your day-to-day life? Would you say very important, fairly important, not too important or not at

all important?" The measures of organizational, non-organizational, and subjective religious involvement named heretofore will be subsequently referred to by their operational definitions, respectively: church attendance, prayer, and faith.

Social Support in the Church. Social support in the respondents' place of worship was evaluated by a measure of instrumental support. This indicator assessed the frequency with which respondents who report being a member of a church or other place of worship received support from other church members. This item read, "How often do people in your church or place of worship help you out? Would you say very often, fairly often, not too often, hardly ever, or never?"

Measures: Control Variables

Sociodemographic Variables. The sociodemographic variables included in this analysis as control variables are age, education, income, marital status, and physical functioning. Age was measured as an ordinal variable and included 5 categories (18–24, 25–34, 35–44, 45–54, and 65 and over). Income, measured as total family income, included 8 categories (<$5,000/y, $5,000–$9,999/y, $10,000–$14,999/y, $15,000–$19,999/y, $20,000–$24,999/y, $25,000–$29,999/y, $40,000–$49,999/y, and >$50,000/y). Education, measured as an ordinal variable, included the following categories: less than high school education, high school or GED, some college education, and college graduation. Marital status categories included currently married, never married, living with partner, separated/divorced, and widowed.

Church Membership. This item asked respondents to report whether or not they were members of a church or other religious organization.

Physical Functioning. A measure of physical functioning was included, to control for a possible spurious association between church attendance and poor health. Prior research has found that physical limitations, particularly in elderly populations, may prevent service attendance.[3] Respondents were asked a series of questions about the extent to which their health limited their ability to engage in a range of activities, from "vigorous activities, such as running, lifting heavy objects, participating in strenuous sports" to "walking 1 block" or "bathing or dressing yourself." Response categories included "Yes, limited a lot," "Yes, limited a little," and "No, not limited at all."

Measures: Dependent Variables

General Health. A single-item measure of general health used asked respondents whether their health is excellent, very good, good, fair, or poor. This item has been proven to be very predictive of population mortality.[40]

Chronic Conditions. The following 2 indicators reflecting a respondent's report of chronic health conditions were used: asthma and/or arthritis and hypertension and/or diabetes. These 2 groupings were used after preliminary analyses with these indices yielded the most statistically significant results.

Depressive Symptoms. The Center for Epidemiologic Studies' Depression scale was used to assess a respondent's experience of depressive symptoms.[41] The short form scale used for this analysis consisted of 11 items assessing the frequency with which respondents experienced feelings that were symptomatic of depression, for example, sleeplessness, loneliness, poor appetite, or sadness ($\alpha = 0.84$, $N = 668$).

Data Analysis

Univariate analyses were conducted to describe the overall sample in terms of the main independent variables of interest, the sociodemographic controls, and dependent variables. Descriptive analyses (*t* tests of differences in means) also were conducted to examine any differences between respondents who reported being a member of a church or other place of worship and those who did not report such membership. In addition, cross tabulations were conducted to examine any significant differences between these groups according to marital status (i.e., never married, separated/divorced, widowed, and living with partner).

A series of regression analyses using the entire sample tested the independent variables as continuous measures to determine their effects on the health outcomes, controlling for the effects of sociodemographic variables, church membership and physical functioning. Individuals who did not belong to a religious organization were assigned a value of 0 on the attendance variable in analyses examining the effects of church attendance on health for the full sample; a control variable for membership in a religious organization was included in these analyses. Multiple regression analyses were conducted with church members only ($n = 385$) to test the mediation of church social support in the relationship between church attendance and the health outcomes.

RESULTS

Descriptive Results: Differences Between Church Members and Nonmembers

Table 1 summarizes descriptive data for the 2 samples included in these analyses: all African-American women in the sample ($n = 679$); and church members only ($n = 385$). In addition, for comparative purposes, we show descriptive data for survey respondents who did not self-report as members of a church or place of worship. Members of a church or other place of worship will subsequently be referred to as "church members." Denomination of

Table 1. Means and Standard Deviations for Major Variables: Comparison Among Whole Sample, Church Members, and Nonmembers

	African-American Women, Whole Sample		African-American Women, Church Members		African-American Women, Nonmembers	
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)
Age, y	678	38.0 (16.6)	389	40.4 (17)*	288	35.48 (15.398)
Education, y	675	12 (2.09)	389	12.3 (2.2)†	285	11.80 (1.903)
Income	678	$14,000/y (—)	389	$12,000/y* (—)	288	$8,000/y (—)
Physical functioning	677	7.44 (3.27)	388	7.24 (3.35)	288	7.69 (3.134)
Never married	677	0.41 (0.49)	389	0.339 (0.474)*	287	0.509 (0.501)
Living with partner	677	0.11 (0.314)	389	0.10 (0.297)	287	0.129 (0.336)
Widowed	677	0.010 (0.295)	389	0.11 (0.307)	287	0.084 (0.277)
Separated/divorced	677	0.174 (0.380)	389	0.208 (0.407)†	287	0.125 (0.332)
Church attendance	675	1.56 (0.453)	389	3.70 (1.03)	287	—
Prayer	675	5.48 (0.925)	389	5.62 (0.735)	286	5.30 (1.108)
Faith	677	3.78 (0.498)	389	3.89 (0.308)	288	3.61 (0.642)
Global health	677	3.29 (1.043)	388	3.28 (1.059)	288	3.31 (1.024)
Depressive symptoms	678	1.49 (0.389)	389	1.48 (0.393)	288	1.51 (0.383)
Asthma or arthritis§	678	0.310 (0.462)	389	0.342 (0.475)‡	288	0.264 (0.442)
Diabetes or hypertension	678	0.27 (0.445)	389	0.316 (0.466)†	288	0.212 (0.409)

* *Results of* t *test comparing church members and nonmembers significant at* P ≤ *.0001.*

† *Results of* t *test comparing church members to nonmembers, significant at* P ≤ *.001.*

‡ *Results of* t *test comparing church members to nonmembers, significant at* P ≤ *.01.*

§ *Several different indicators of chronic conditions were used in the analyses (see Methods for more detail). The indicators shown here are those that were strongly associated with selected independent variables.*

respondents was not collected as part of this survey. The overall sample has been described elsewhere.[38] Results of tests of mean differences on sociodemographic variables and physical functioning according to membership in a church or other place of worship are reported in Table 1. Church members differed from nonmembers in that they were: older ($P ≤ .0001$); reported higher incomes ($P ≤ .0001$); had completed more formal education ($P ≤ .001$); were more likely to be separated/divorced ($P ≤ .001$); and less likely to have never been married ($P ≤ .0001$). In addition, church members were more likely to report diagnoses of diabetes and/or hypertension ($P ≤ .001$), or asthma and/or arthritis ($P ≤ .01$) when compared to nonchurch members (Table 1).

Religious Involvement in the Overall Sample

Over half (57.5%) of the overall sample reported that they were members of a church or other place of worship (Table 2). Of those who were church members, approximately 20% reported attending church at least once a week and 14% reported attending more than once a week and a few times a month. More than half of church members (58.9%) reported receiving help from people in the church very or fairly often. Most respondents reported high levels of faith, with 80% reporting that their faith was very important as a source of strength in their day-to-day life. Sixty-seven percent of respondents reported praying several times a day, 23% reported praying once a day, and 4% reported praying at least once a week (Table 2).

Religious Involvement and Health

Prior to conducting multivariate analyses, a colinearity analysis was performed to evaluate the condition indices associated with each principal component and to ensure that no component contributed strongly to the variance of 2 or more variables. The results of these diagnostics (not shown) confirmed that multicolinearity was not a problem. Among the control variables included in the models, physical functioning was significantly associated with health ($P ≤ .0001$) across all the models and age (particularly being 65 and older) was also significantly associated with selected health outcomes. Those who reported higher physical functioning were more likely to report better health, and age was significantly positively associated with reports of worse general health and reports of more chronic conditions (asthma, arthritis, diabetes and hypertension). The only exception to worsening health with age was that women age 65 and older were significantly less likely to report depressive symptoms ($P ≤ .01$). Education was not significantly associated with health in any of the models, and income and marital status (being separated/divorced) were only significantly associated with self-reported general health. Those with higher income were more likely to report better general health and those who were separated or divorced were less likely to report better general health.

Results reported in Table 3 show that those who were church members were significantly less likely to report depressive symptoms and better general health, and

Table 2. Frequency Distributions for Religious Involvement Measures

Item	n	Percent
Church member		
Yes	389	57.5
No	288	42.5
Frequency of church attendance		
More than once a week	98	14.5
At least once a week	137	20.2
A few times a month	98	14.5
A few times a year	51	7.5
Less than once a year	5	0.7
Never	288	42.5
Importance of faith in daily life		
Very important	545	80.5
Fairly important	117	17.3
Not too important	10	1.5
Not at all important	5	0.7
Prayer		
Several times a day	451	66.8
Once a day	156	23.1
At least once a week	30	4.4
A few times a month	26	3.9
A few times a year	6	0.9
Never	6	0.9
Social support in the church*		
Very often	101	26.1
Fairly often	127	32.8
Not too often	81	20.9
Hardly ever	45	11.6
Never	33	8.5

* *This item was answered by church members only.*

significantly more likely to report hypertension and diabetes. All the dimensions of religious involvement under investigation were significantly associated with selected health indicators. Frequency of church attendance was significantly associated with fewer depressive symptoms, and better general health, after controlling for sociodemographic variables, church membership, and physical functioning. Prayer was significantly associated with better mental health; respondents who prayed more often reported fewer depressive symptoms ($P < .01$), after controlling for sociodemographics and physical functioning. Respondents who relied more on their faith as a source of strength in their daily lives were significantly less likely to report asthma and arthritis ($P < .05$; Table 3).

Organizational Religious Involvement, Social Support in the Church, and Health

Analyses exploring the relationships between church attendance, social support in the church, and health were conducted with the subset of the study population who were church members ($n = 385$). Frequency of church attendance was significantly associated ($P \leq .001$) with receipt of social support from fellow church members. That is, church members who reported more frequent church attendance were more likely to report a higher frequency of receipt of social support from fellow church members

(results not shown). Table 4 shows the results of analyses regressing health outcomes on the multiple dimensions of religious involvement and church social support, after controlling for sociodemographic variables and physical functioning. The positive association between church attendance and reports of fewer depressive symptoms was reduced to nonsignificance with the addition of church social support into the model. This is consistent with the hypothesis of full mediation of social support in the church in the association between church attendance and fewer depressive symptoms. In the models where self-reported general health was regressed on the dimensions of religious involvement, church social support was a partial mediator in the positive association between church attendance and self-reported general health. That is, the magnitude of the positive association between church attendance and self-rated general health was reduced after church social support was added in the second model (Table 4).

Limitations

There are several important limitations of this investigation. Given prior research indicating the salience of religious involvement for health,[1–7] and community input reinforcing the importance of religion in health, the community survey was designed to include some indicators of religious involvement. However, understanding religious involvement and its association with health was not the main purpose of the community survey, and only a limited number of measures of religious involvement were able to be included. Consistent with prior research that has shown rates of religious involvement to be higher for African Americans and for women as compared to other populations,[12] the relatively high levels of religious involvement across the entire study population may reduce the magnitude of effects involving these variables. In addition, several factors, including eligibility criteria requiring all respondents to be over 18 years of age and responsible for the care of a child for at least 5 hours a week, limit the generalizability of the findings presented here. The sample was relatively homogeneous with regard to residence in a defined geographic area on the east side of Detroit and sociodemographics such as race, gender, socioeconomic status, education and income. Furthermore, the data used for this investigation are cross-sectional; therefore, no inferences can be made about causal relationships among the measures that were examined.

DISCUSSION

Results and Key Benefits of Using a CBPR Approach

Despite these limitations, the analyses reported here offer important insights into pathways through which various indicators of religiosity and spirituality may be related to health outcomes among African-American women residing in low-income urban communities. The results suggest that membership and participation (frequency of

Table 3. Health Outcomes Regressed on Sociodemographic Variables, Physical Functioning, and Multiple Dimensions of Religious Involvement (*N* = 678)*

	Dependent Variables							
	Depressive Symptoms		Self-reported General Health		Asthma/Arthritis		Hypertension/Diabetes	
	b (SE)	B^{sig}	b (SE)	B^{sig}	b (SE)	B^{sig}	b (SE)	B^{sig}
Education†								
Age‡ (25–34)	0.014 (0.041)	0.016	−0.028 (0.106)	−0.012	0.014 (0.050)	0.014	0.098 (0.045)	0.099‖
Age (35–44)	0.011 (0.044)	0.012	−0.220 (0.111)	−0.093‖	0.056 (0.052)	0.053	0.172 (0.047)	0.172#
Age (45–64)	−0.092 (0.054)	−0.087	−0.395 (0.138)	−0.139¶	0.223 (0.065)	0.177¶	0.446 (0.058)	0.370#
Age (65 and older)	−0.226 (0.068)	−0.178¶	−0.446 (0.173)	−0.131#	0.408 (0.081)	0.269#	0.523 (0.073)	0.360#
Income	−0.089 (0.007)	0.055	0.043 (0.017)	0.103‖	0.001 (0.008)	0.007	−0.042 (0.007)	−0.023
Never married§	0.068 (0.044)	0.087	−0.031 (0.111)	−0.015	0.076 (0.052)	−0.008	0.057 (0.047)	0.063
Living with partner	0.162 (0.056)	0.130‖	−0.016 (0.143)	−0.005	0.072 (0.067)	0.048	0.090 (0.061)	0.064
Widowed	0.041 (0.059)	0.031	−0.065 (0.152)	−0.018	−0.020 (0.071)	−0.013	0.100 (0.064)	0.066
Separated/divorced	0.079 (0.046)	0.078	−0.292 (0.118)	−0.107‖	0.094 (0.055)	0.078	0.027 (0.050)	0.023
Physical functioning	−0.044 (0.005)	−0.370#	0.122 (0.012)	0.382#	−0.033 (0.006)	−0.230#	−0.025 (0.005)	−0.186#
Church membership	−0.050 (0.016)	−0.120¶	−0.468 (0.183)	−0.222‖	0.137 (0.086)	0.147	0.191 (0.078)	0.214‖
Church attendance	−0.045 (0.018)	−0.232‖	0.128 (0.047)	0.245¶	−0.028 (0.022)	−0.120	−0.037 (0.020)	−0.165
Prayer	−0.050 (0.016)	−0.120¶	0.057 (0.042)	0.051	0.031 (0.020)	0.063	0.032 (0.018)	0.067
Faith	0.037 (0.031)	0.048	0.052 (0.078)	0.025	−0.078 (0.037)	−0.085‖	−0.011 (0.033)	−0.012
Total R^2	.212		.287		.295		.295	
Adjusted R^2	.191		.268		.277		.277	

b = unstandardized Beta coefficient; B^{sig} = standardized Beta coefficient; SE = standard error.

* This analysis was done using listwise deletion of missing data.

† Education (using less than high school degree as referent group) not a significant predictor in any of the models.

‡ Age (using age 18–24 as referent group).

§ Marital status (using married as referent group).

‖ P ≤ .05.

¶ P ≤ .01.

P ≤ .001.

service attendance) in a religious organization, and more private forms of religious devotion (e.g., faith and prayer) are important for health. Differences in findings depending on the dimensions of religious involvement and health indicators used suggest that religious involvement may interact with other factors to influence health in diverse ways. The CBPR process contributed to the use of multiple indicators of religious involvement and permitted the disentangling of effects of religious involvement on health. For example, prayer had a greater effect on mental health (reports of fewer depressive symptoms) than on the physical health indicators (self-reported general health and chronic conditions), and the importance of faith or spiritual beliefs as a source of strength in one's day-to-day life was significantly associated with fewer reports of asthma and arthritis. Numerous studies have found protective effects of private expressions of religion (such as prayer) on mental health,[4,5,6,12,16,20,42,43] and scholars have suggested that prayer may allow people to actively express religious beliefs that may help to alleviate anxiety.[12,20] The indicator of faith used in this study was included based on discussions with community members about the importance of their faith and spiritual beliefs in dealing with the day-to-day stressors.

Consistent with the literature,[25,34,44–46] results of this investigation show that one of the key advantages of religious involvement is increased social support and that service attendance positively impacts health through instrumental social support. Perceived support and satisfaction with network members have been found to have strong positive main effects, as well as significant stress-buffering effects, on health.[26,27,31] This study included only a single measure of instrumental support. Future research should include measures of multiple types of social support and specific functions of social relationships in a religious organization.

The finding that the frequency of service attendance was positively associated with health in some instances (fewer depressive symptoms and better self-reported general health) while membership in a religious organization was negatively associated with health in other instances (worse self-reported general health, higher reports of chronic conditions) highlights the complexity of the relationships between religious involvement and health. Being actively engaged in a religious organization may have different implications for health than simply being a member and future research should examine these pathways of influence more clearly.

One of the important benefits of using a CBPR approach is involving community members in the interpretation of key findings,[14,37] thereby enhancing the understanding of the results. A critical component in the analysis and interpretation of these data was sharing the survey findings with community members through a feedback and

Table 4. Health Outcomes Regressed on Sociodemographic Variables, Physical Functioning, Multiple Dimensions of Religious Involvement, and Church Social Support (N = 385)*

Independent Variables	Depressive Symptoms Model I b (SE)	B^sig	Model II b (SE)	B^sig	Self-reported General Health Model I b (SE)	B^sig	Model II b (SE)	B^sig	Asthma/Arthritis Model I b (SE)	B^sig	Model II b (SE)	B^sig	Diabetes/Hypertension Model I b (SE)	B^sig	Model II b (SE)	B^sig
Education†																
Age‡ (25–34)	0.047 (0.059)	0.052	0.028 (0.058)	0.031	−0.115 (0.153)	−0.047	−0.115 (0.152)	−0.047	0.035 (0.072)	0.032	0.032 (0.073)	0.029	0.165 (0.063)	0.154‖	0.165 (0.064)	0.153‖
Age (35–44)	0.078 (0.060)	0.088	0.050 (0.059)	0.057	−0.363 (0.155)	−0.154‖	−0.363 (0.155)	−0.154‖	0.141 (0.074)	0.133	0.129 (0.074)	0.121	0.233 (0.064)	0.224#	0.229 (0.065)	0.220#
Age (45–64)	0.045 (0.071)	0.004	−0.017 (0.069)	−0.017	−0.632 (0.184)	−0.234‖	−0.619 (0.183)	−0.229‖	0.259 (0.087)	0.213‖	0.252 (0.087)	0.207¶	0.620 (0.076)	0.521#	0.617 (0.077)	0.519#
Age (65 and older)	−0.179 (0.084)	−0.152‖	−0.221 (0.082)	−0.189¶	−0.710 (0.218)	−0.223‖	−0.659 (0.218)	−0.208¶	0.409 (0.103)	0.286#	0.390 (0.104)	0.273#	0.637 (0.09)	0.456#	0.629 (0.091)	0.451#
Income	−0.015 (0.009)	−0.098	−0.012 (0.009)	−0.084	0.054 (0.023)	0.134‖	0.054 (0.023)	0.135‖	−0.00009 (0.011)	0.000	0.0004 (0.011)	0.002	−0.018 (0.009)	−0.103	−0.018 (0.009)	−0.102
Never married§	0.085 (0.056)	0.102	0.066 (0.055)	0.080	−0.107 (0.146)	−0.048	−0.091 (0.145)	−0.041	−0.062 (0.069)	−0.006	−0.014 (0.069)	−0.014	0.047 (0.060)	0.048	0.044 (0.061)	0.045
Living w/ partner	0.132 (0.076)	0.099	0.133 (0.074)	0.102	−0.249 (0.197)	−0.070	−0.248 (0.196)	−0.070	0.112 (0.093)	0.070	0.1121 (0.093)	0.069	0.076 (0.081)	0.049	0.076 (0.082)	0.049
Widowed	0.070 (0.073)	0.054	0.068 (0.071)	0.053	0.111 (0.190)	0.032	0.118 (0.188)	0.034	−0.065 (0.090)	−0.041	−0.067 (0.090)	−0.043	0.095 (0.078)	0.062	0.094 (0.079)	0.061
Separated/ divorced	0.064 (0.056)	0.067	0.048 (0.055)	0.050	−0.267 (0.146)	−0.103	−0.235 (0.146)	−0.091	0.067 (0.069)	0.057	0.056 (0.070)	0.040	−0.038 (0.060)	−0.033	−0.042 (0.061)	−0.037
Physical functioning	−0.042 (0.006)	−0.355#	−0.044 (0.006)	−0.380#	0.105 (0.017)	0.332#	0.106 (0.017)	0.336#	−0.036 (0.008)	−0.253#	−0.037 (0.008)	−0.257#	−0.021 (0.007)	−0.149¶	−0.021 (0.007)	−0.150¶
Church attendance	−0.050 (0.020)	−0.131‖	−0.030 (0.020)	−0.078	0.145 (0.052)	0.141¶	0.116 (0.053)	0.113‖	−0.015 (0.025)	−0.033	−0.052 (0.025)	−0.011	−0.070 (0.021)	−0.155¶	−0.066 (0.022)	−0.145¶
Prayer	−0.065 (0.028)	−0.122‖	−0.065 (0.027)	−0.123‖	−0.035 (0.073)	0.025	0.029 (0.072)	−0.021	0.037 (0.034)	0.058	0.036 (0.034)	0.056	0.110 (0.030)	0.176#	0.110 (0.030)	0.175#
Faith	0.090 (0.063)	0.071	0.104 (0.062)	0.083	0.097 (0.165)	0.028	0.050 (0.165)	0.015	−0.201 (0.078)	−0.132‖	−0.190 (0.079)	−0.124‖	0.018 (0.068)	0.012	0.024 (0.069)	0.016
Church social support			−0.059 (0.015)	−0.185#			0.100 (0.040)	0.116‖			−0.031 (0.019)	−0.081			−0.014 (0.017)	−0.036
Total R²	.211		.239		.263		.272		.221		.217		.376		.376	
Adjusted R²	.244		.273		.294		.305		.184		.183		.349		.347	

b = unstandardized Beta coefficient; B^sig = standardized Beta coefficient; SE = standard error.
* This analysis includes only those respondents who were members of a church or other place of worship.
† Education (using less than high school degree as referent group) not a significant predictor in any of the models.
‡ Age (using age 18–24 as referent group).
§ Marital status (using married as referent group).
‖ P ≤ .05.
¶ P ≤ .01.
# P ≤ .001.

discussion session. Many community members involved in this discussion described specific examples in which they believed prayer had influenced health outcomes, and also described ways that being a part of a religious community provided a critical network of support. In in-depth interviews and conversations related to the results reported here, community members also highlighted the complexity of religious involvement, indicating, for example, that membership in a place of worship may or may not be a meaningful assessment of religiosity and that people who are not part of a formal religious organization may still accrue benefits of other forms of religious involvement, such as prayer. They also described clearly the complexity of social relationships within religious communities, noting both benefits and expectations associated with membership.

A key benefit of using a CBPR approach is the increased relevance of findings for the community, given the involvement of the community in all aspects of the research.[14,37] In this study, community members' participation in identifying dimensions of religious involvement to be included on the survey increased the validity of measures. For example, the measure of faith ("importance of faith or spiritual beliefs as a source of strength in one's day-to-day life") was included in the survey based on community input about the importance of relying on one's faith as a source of support, particularly in coping with poor health and community stressors. In the discussion of these results, women in the community actively reinforced the use of faith to help sustain them through illness and to counter some of the negative effects of chronic conditions. Such findings may contribute to health care providers' efforts to support their patients as they seek to improve health. For example, a discussion of social support resources available through one's religious institution or spiritual beliefs that may support health-promoting practices could help patients adhere to physician recommendations.

Community-based participatory research approaches can contribute to the involvement of community members in the application of findings to inform action.[14,37] As community members discussed these findings, they identified potential roles and limitations that different forms of religious involvement might play in disease prevention and health promotion. For example, many who participated in these discussions felt that private expressions of religion, such as prayer, may help to protect people against the stresses of living under adverse conditions, and that being part of a church community offers important social connections, and also helps access resources and address problems. Recognizing the various pathways through which religious institutions may influence health also suggests that faith-based disease prevention and health promotion campaigns can extend beyond an emphasis on religious organizations as places where individuals can be targeted (e.g., conducting health fairs in the church), to recognize them as communities that can build and strengthen socially supportive relationships. These opportunities may be particularly important in areas with high rates of poverty and a great need for tangible aid and services.

The results of this study also suggest cautions for faith-based initiatives that focus only on networks of individuals who are affiliated with a religious organization. Nearly half (43%) of survey respondents were not members of a church or place of worship, suggesting that faith-based initiatives focused only on religious institutions may miss opportunities to work with unaffiliated community members. The mission of public health—"to fulfill society's interest in assuring the conditions in which people can be healthy"—emphasizes the need to partner with an array of sectors and institutions in order to extend our reach to as diverse a community as possible.[47] Faith-based organizations should be considered an important, but not the only, partner in community-based health promotion and advocacy efforts.[22,32] Through community-based participatory research partnerships such as the one described in this article, professionals can support the actions of community members as they work to provide support and improve health.

REFERENCES

1. Levin JS, Chatters LM, Ellison CG, Taylor RJ. Religious involvement, health outcomes, and public health practice. Curr Issues Public Health. 1996;2:220–5.
2. Troyer H. Review of cancer among 4 religious sects: evidence that life-styles are distinctive sets of risk factors. Soc Sci Med. 1988;26:1007–17.
3. Jarvis GK, Northcutt HC. Religion and differences in morbidity and mortality. Soc Sci Med. 1987;25:813–24.
4. Bergin AE. Religiosity and mental health: a critical reevaluation and meta-analysis. Prof Psychol Res Pr. 1983;14:170–84.
5. Gartner J, Larson DB, Allen GD. Religious commitment and mental health: a review of the empirical literature. J Psychol Theol. 1991;19:6–25.
6. Larson DB, Sherrill KA, Lyons JS, et al. Associations between dimensions of religious commitment and mental health reported in the American Journal of Psychiatry and Archives of General Psychiatry: 1978–1989. Am J Psychiatry. 1992;149:557–9.
7. Chatters LM, Levin JS, Taylor RJ. Antecedents and dimensions of religious involvement among older black adults. J Gerontol. 1992;47(suppl):269–78.
8. Ellison CG. Religious involvement and subjective well-being. J Health Soc Behav. 1991;32:80–99.
9. Ellison CG. Race, religious involvement and depressive symptoma-

tology in a southeastern U.S. community. Soc Sci Med. 1995;40: 1561–72.

10. Ellison CG, Gay DA. Religion, religious commitment and life satisfaction among Black Americans. Sociol Q. 1990;30:123–47.

11. Ellison CG, Sherkat DE. The 'Semi-Voluntary Institution' revisited: regional variations in church participation among Black Americans. Soc Forces. 1995;74:1415–37.

12. Ellison CG, Taylor RJ. Turning to prayer: social and situational antecedents of religious coping among African Americans. Rev Relig Res. 1996;38:61–81.

13. Levin JS, Chatters LM. Research on religion and mental health: an overview of empirical findings and theoretical issues. In: Koenig HV, ed. Handbook of Religion and Mental Health. San Diego, Calif: Academic Press; 1998.

14. Israel BA, Schulz AJ, Parker EA, Becker AB. Key principles of community-based research. Annu Rev Public Health. 1998;19: 173–202.

15. Levin JS. Religion and health: is there an association, is it valid, and is it causal? Soc Sci Med. 1995;38:1475–82.

16. Chatters LM. Religion and health: public health research and practice. Annu Rev Public Health. 2000;21:335–67.

17. Williams DR. The measurement of religion in epidemiologic studies: problems and prospects. In: Levin JS, ed. Religion in Aging and Health. Thousand Oaks, Calif: Sage Publications; 1994.

18. Larson DB, Pattison EM, Blazer DG, Omran AR, Kaplan BH. Research on religious variables in four major psychiatric journals, 1978–1982. Am J Psychiatry. 1986;143:329–34.

19. Levin JS, Schiller PL. Is there a religious factor in health? J Relig Health. 1987;26:9–36.

20. Ellison CG, Levin JS. The religion-health connection: evidence, theory and future directions. Health Educ Behav. 1998; 25:700–20.

21. Caldwell CH, Chatters LM, Billingsley A, Taylor RJ. Church-based support programs for elderly Black adults: congregational and clergy characteristics. In: Kimble MA, McFadden SH, Ellor JW, Seeber JJ, eds. Handbook on Religion, Spirituality, and Aging. Minneapolis, Minn: Augsburg Fortress; 1995:306–24.

22. Maton KI, Wells E. Religion as a community resource for well-being: prevention, healing and empowerment pathways. J Soc Issues. 1995;51:177–93.

23. Levin JS. The role of the black church in community medicine. J Natl Med Assoc. 1984;76:477–83.

24. Levin JS, Chatters LM, Taylor RJ. Religious effects on health status and life satisfaction among black Americans. J Gerontol. 1995; 50B(suppl):154–63.

25. Taylor RJ, Chatters LM. Church members as a source of informal social support. Rev Relig Res. 1988;30:193–203.

26. Kessler R, Price R, Wortman C. Social factors in psychopathology: stress, social support and coping processes. Annu Rev Psychol. 1985;36:531–72.

27. Leavy RL. Social support and psychological disorder: a review. J Community Psychol. 1983;11:3–21.

28. Israel BA, Rounds KA. Social networks and social support: a synthesis for health educators. Adv Health Educ Promotion. 1987;2: 311–51.

29. House JS, Lanids K, Umberson D. Social relationships and health. Science. 1988;241:540–5.

30. Heaney CA, Israel BA. Social networks and social support in health education. In: Glanz K, Lewis FM, Rimer BK, eds. Health Behavior and Health Education: Theory, Reseach and Practice. San Francisco, Calif: Jossey-Bass; 1997.

31. Berkman LF, Glass T. Social integration, social networks, social support and health. In: Berkman LF, ed. Social Epidemiology. New York, NY: Oxford Press; 2000:137–73.

32. Taylor RJ, Chatters LM. Church-based informal support among elderly blacks. Gerontologist. 1986;26:637–42.

33. Lincoln CE, Mamiya LH. The Black Church in the African-American Experience. Chapel Hill, NC: Duke University Press; 1990.

34. Taylor RJ, Chatters LM. Patterns of informal support to elderly black adults: family, friends, and church members. Soc Work. 1986;31:432–8.

35. Levin JS, Taylor RJ, Chatters LM. A multidimensional measure of religious involvement for African Americans. Sociol Q. 1995;36: 901–19.

36. Thoits PA. Stress, coping, and social support processes: Where are we? What next? J Health Soc Behav. 1995;Spec No:53–79.

37. Schulz AJ, Parker EA, Israel BA, Becker AB, Maciak BJ, Hollis R. Conducting a participatory community-based survey for a community health intervention on Detroit's East Side. J Public Health Manag Pract. 1998;4:10–24.

38. Parker EA, Schulz AJ, Israel BA, Hollis R. Detroit's East Side Village Health Worker Partnership: community-based health advisor intervention in an urban area. Health Educ Behav. 1998; 25:24–45.

39. Kalton G. Introduction to Survey Sampling. Sage University Series, Quantitative Applications in the Social Sciences, no. 35. Beverly Hills, Calif: Sage Publications; 1983.

40. Idler EL, Benyamini Y. Self-rated health and mortality: a review of twenty-seven community studies. J Health Soc Behav. 1997;38: 21–37.

41. Radloff LS. The CES-D: a self-report depression scale for research on the general population. Appl Psychol Measurement. 1977;1: 385–401.

42. Levin JS, Markides KS. Religious attendance and psychological well-being in middle-aged and older Mexican Americans. Sociol Anal. 1988;49:66–72.

43. Musick MA. Religion and subjective health among black and white elders. J Health Soc Behav. 1996;37:221–37.

44. Chatters LM, Taylor RJ, Lincoln KD. African-American religious participation: a multi-sample comparison. J Sci Study Relig. 1999; 38:132–45.

45. Ellison CG, George LK. Religious involvement, social ties, and social support in a Southeastern community. J Sci Study Relig. 1994;33: 46–61.

46. Cohen S, Willis TA. Stress, social support, and the buffering hypothesis. Psychol Bull. 1985;98:310–57.

47. Institute of Medicine. Committee for the Study of the Future of Public Health, Division of Health Care Services. The Future of Public Health. Washington, DC: National Academy Press; 1988.